

WHAT IS CLAIMED IS:

1. A method for simulating the effect of an exploding projectile fired by a weapon, the method comprising:

emitting a weapon signal from a weapon toward a target area;

detecting the weapon signal by a sensor located near the target area;

transmitting an impact signal when the weapon signal is sensed by the sensor and causing the impact signal to cover a simulated impact area including a first portion of the impact area which is covered by the weapon signal from the weapon and a second portion of the impact area which is not covered by the weapon signal of the weapon and which is part of the impact area of a simulated detonation of a projectile that would be fired by the weapon to the impact area.

2. The method of claim 1, further comprising determining the trajectory of a simulated projectile fired by the weapon based on the angle of incidence of the weapon signal on the sensor;

modifying the impact signal directionally for approximating the area covered by the impact signal to simulate the impact area of detonation of a real projectile near the target area.

3. A device for simulating the effect of exploding projectiles fired by a weapon toward a target area, the device comprising;

a sensor for being located near the target area and adapted for sensing a weapon signal from a weapon;

a transmitter operatively linked to the sensor such that a weapon signal detected by the sensor and indicating the simulated firing of a projectile with an explosive effect in the target area operates the transmitter to emit an impact signal over the impact area of the simulated projectile.

4. The device of claim 3, wherein the sensor is directionally sensitive and adapted to sense the direction from which the weapon signal is received;

the transmitter connected with the sensor is operable to emit the impact signal with a directionally variable range, so that the transmitter is adapted for being triggered by the sensor according to the angle of incidence of the weapon signal of the weapon in such a manner that the area supplied with an effective impact signal by the transmitter approximates the impact there of an exploding projectile.

5. The device of claim 4, wherein the sensor senses the weapon signal over a total angular range, the sensor comprises a plurality of sensor elements, each sensor element covering a sector of the total angular range covered by the sensor for enabling the sensor to determine the angle of incidence of the weapon signal emitted by the weapon dependent upon the sensor elements on which the weapon signal is incident.

6. The device of claim 5, wherein the transmitter comprises a plurality of transmitter elements, each transmitter element being adapted to supply approximately a respective sector having a controllable range over a respective part of the impact area and each of the transmitter elements being connected with at least one of the plurality of sensor elements each for a particular sector so that each transmitter element is triggered by the at least one sensor element according to the angle of incidence of the weapon signal.

7. The device of claim 5, wherein the transmitter comprises a plurality of transmitter elements, each transmitter element being adapted to supply approximately a respective sector having a controllable range over a respective part of the impact area and to adjust the range of the impact signal in the corresponding direction, the transmitter elements being operatively connected with the sensor, so that each transmitter element is triggered by the sensor according to the angle of incidence of the weapon signal.

8. The device of claim 3, further comprising a reflector for reflecting at least an effective portion of the weapon signal back to a weapon which emits the weapon signal.

9. The device of claim 8, further comprising a weapon operable to emit a weapon signal toward the sensor and toward the reflector, and the reflector and the weapon being positioned so that the signal from the weapon is reflected by the reflector back to the weapon, and the weapon emits a weapon signal to be transmitted to the sensor by firing of the weapon.

10. The device of claim 3, further comprising a weapon spaced from the sensor operable to emit a weapon signal toward the sensor.

11. The device of claim 10, wherein the sensor is responsive to laser light and the weapon includes a device for emitting laser light toward the sensor.

12. The device of claim 3, wherein the sensor is responsive to laser light.

13. The device of claim 3, wherein the transmitter comprises at least one laser light source and the laser light source of the transmitter emits an impact signal in the form of laser light.

14. The device of claim 6, further comprising screens at the transmitter separating the transmitter into transmitter elements for providing an essentially sectorial restriction of the impact signal emitted by the transmitter elements.

15. The device of claim 14, wherein the screens of the transmitter comprise separating walls between the transmitter elements.

16. The device of claim 15, wherein the screens between the transmitter elements are adjustable in the function of angle of incidence of the weapon signal received on the sensor for allowing adaptation of the area covered by the impact signal of each of transmitter elements to the impact area of an exploding projectile.

17. The device of claim 3, wherein the sensor is sensitive to high frequency radio signals or

18. The device of claim 17, wherein the transmitter is adapted to emit an impact signal in the form of a high frequency radio signal or an ultrasonic signal.

19. The device of claim 3, wherein the transmitter is adapted to emit an impact signal in the form of a high frequency radio signal or an ultrasonic signal.

20. An installation for simulating combat action comprising at least one obstacle to visibility of an entire impact area of a projectile, the obstacle having a periphery;
a device according to claim 3 located at the periphery of the obstacle positioned for allowing simulation of the effect of a weapon fired projectile exploding at the target location near the device.

(The following information was obtained from the records of the Bureau of Prisons, Washington, D.C., and is being furnished for your information.)